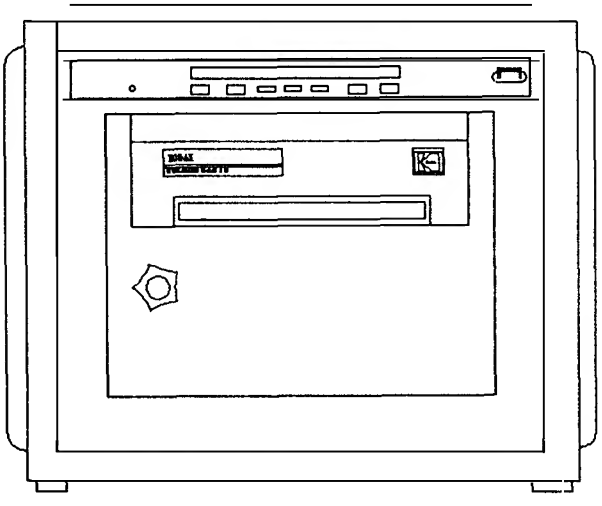
MINILOADER MODEL 1M

COMPONENT LOCATOR



FEBRUARY 1992

SERVICE CODES : -3234/3235

PRINTED CIRCUIT BOARDS.

PCB 301 .... MICROPROCESSOR PCB and RELAYS .....
PCB 302 .... DISPLAY PCB .....
PCB 303 .... ESR KEYPAD, PHOTOCELL AMPLIFIERS and PRINTER INTERFACE .....
PCB 304 .... LED PCB (green, yellow and red) .....
PCB 206 .... TRANSFORMER SECONDARY FUSES .....

FUSES

F1	COMPRESSOR MOTOR	T 2 AMP (PCB 301)	FIG 1
F2	VACUUM PUMP, CASSETTE	T 2 AMP (PCB 301)	FIG 1
F3	VACUUM PUMP, MAGAZINE	T 2 AMP (PCB 301)	FIG 1
F4	FAN MOTOR	T 2 AMP (PCB 301)	FIG 1
F5	TILT MOTOR	T 2 AMP (PCB 301)	FIG 1
F6 ..*	CONVEYOR BELT MOTOR	T 6.3 AMP (PCB 301) ..	FIG 1
F7	CAM MOTOR	T 6.3 AMP (PCB 301) ..	FIG 1
F13 ...	SOLENOID VALVE SV2, MAGAZINE INJECTOR	T 4 AMP (PCB 301)	FIG 1
F16 ...	RELAY 12 VOLT DC PROTECTION	T 1 AMP (PCB 301)	FIG 1
F17 ...	SOLENOID VALVE SV4, MAGAZINE SUCKERS	T 4 AMP (PCB 301)	FIG 1
F18 ...	SOLENOID VALVE SV3, CASSETTE SUCKERS 18 x 24 ..	T 4 AMP (PCB 301)	FIG 1
F19 ...	SOLENOID VALVE SV5, PRESSURE VENT	T 4 AMP (PCB 301)	FIG 1
F20 ...	SOLENOID VALVE SV1, CASSETTE INJECTOR	T 4 AMP (PCB 301)	FIG 1
F22 ...	SECONDARY WINDING, 15 VOLTS AC (RELAYS)	T 4 AMP (PCB 206)	FIG 2
F23 ...	SECONDARY WINDING, 12 VOLTS AC (MOTORS)	T 16 AMP (PCB 206) ...	FIG 2
F24 ...	SECONDARY WINDING, 10 VOLTS AC (P.CELL & MICRO)	T 10 AMP (PCB 206) ...	FIG 2

RELAYS.

K1	COMPRESSOR MOTOR	PCB 301	FIG 1
K2	CASSETTE VACUUM PUMP MOTOR	PCB 301	FIG 1
K3	MAGAZINE VACUUM PUMP MOTOR	PCB 301	FIG 1
K5	TILT MOTOR	PCB 301	FIG 1
K6-F	CONVEYOR BELT MOTOR, FORWARD	PCB 301	FIG 1
K6-R	CONVEYOR BELT MOTOR, REVERSE	PCB 301	FIG 1
K7-F	CAM MOTOR, FORWARD	PCB 301	FIG 1
K7-R	CAM MOTOR, REVERSE	PCB 301	FIG 1
K13	SOLENOID VALVE SV2, MAGAZINE INJECTOR	PCB 301	FIG 1
K17	SOLENOID VALVE SV4, MAGAZINE SUCKERS	PCB 301	FIG 1
Y18	SOLENOID VALVE SV3, CASSETTE SUCKERS 18 x 24	PCB 301	FIG 1
K19	SOLENOID VALVE SV5, PRESSURE VENT	PCG 301	FIG 1
K20	SOLENOID VALVE SV1, CASSETTE INJECTOR	PCB 301	FIG 1
K22	PROCESSOR STAND-BY	PCB 301	FIG 1

YICROSWITCHES.

MS1 ... RECEIVING MAGAZINE PRESENCE (STAND-ALONE VERSION ONLY) .....
MS2 ... SUPPLY MAGAZINE PRESENCE .....
MS3 ... TILT MOTOR, HOME POSITION .....
MS4 ... TILT MOTOR, TILT ON POSITION .....

PHOTOCELLS.

FC1 . . .	CASSETTE AT ENDSTOP plus FILM IN CASSETTE	PCB 303 ... FIG 3
FC2 . . .	CASSETTE ENTERED	PCB 303 ... FIG 3
FC3 . . .	CASSETTE OPENED SIGNAL	PCB 303 ... FIG 3
FC4 . . .	FILM STUCK ON UPPER SCREEN	PCB 303 ... FIG 3
FC5 . . .	SUPPLY MAGAZINE NEARLY EMPTY	PCB 303 ... FIG 3
FC6 . . .	SUPPLY MAGAZINE EMPTY plus SERIAL MAGAZINE CODE	PCB 303 ... FIG 3
FC7 . . .	FILM IN UPPER CHUTE (PROCESSOR INTERFACE VERSION) or RECEIVING MAGAZINE FULL (STAND-ALONE VERSION)	PCB 303 ... FIG 3
FC8 . . .	MULTIPLE FILM LOAD	PCB 303 ... FIG 3
FC9 . . .	FILM IN LOWER CHUTE (VERTICAL INTERFACE VERSION ONLY)	PCB 303 ... FIG 3
FC10 . .	SUPPLY MAGAZINE OPEN	PCB 303 ... FIG 3
FC11 . .	RECEIVING MAGAZINE OPEN (STAND-ALONE VERSION ONLY)	PCB 303 ... FIG 3

MOTORS.

M1	COMPRESSOR MOTOR .....
M2	CASSETTE VACUUM PUMP MOTOR .....
M3	MAGAZINE VACUUM PUMP MOTOR .....
M4	FAN MOTOR .....
M5	TILT MOTOR .....
M6	CASSETTE CONVEYOR MOTOR .....
M7	CAM MOTOR .....

SOLENOID VALVES.

SV1	CASSETTE INJECTOR . . . . .
sv2	MAGAZINE INJECTOR . . . . .
sv3	18 x 24 and 8 x 10 CASSETTE SUCKERS . . . . .
sv4	MAGAZINE SUCKERS . . . . .
sv5	PRESSURE VENT - AT END OF CYCLE . . . . .

TEST POINTS.

SEE FIGURE 5

			PINS +			
TP101	PCB 301	12 VOLT DC, RELAYS	2	u	1	11 - 12.6 V DC
		12 VOLT DC, MOTORS	3	u	4	approx 15 V DC on NO-LOAD
TP102	PCB 301	5 VOLT DC, MICROPROCESSOR	2	u	1	4.8 - 5.2 V DC
		12 VOLT DC, SENSORS	3	u	1	10 - 12 v DC
		CLOCK 11340 MHz	4	u	1	
		POWER ON RESET	5	u	1	

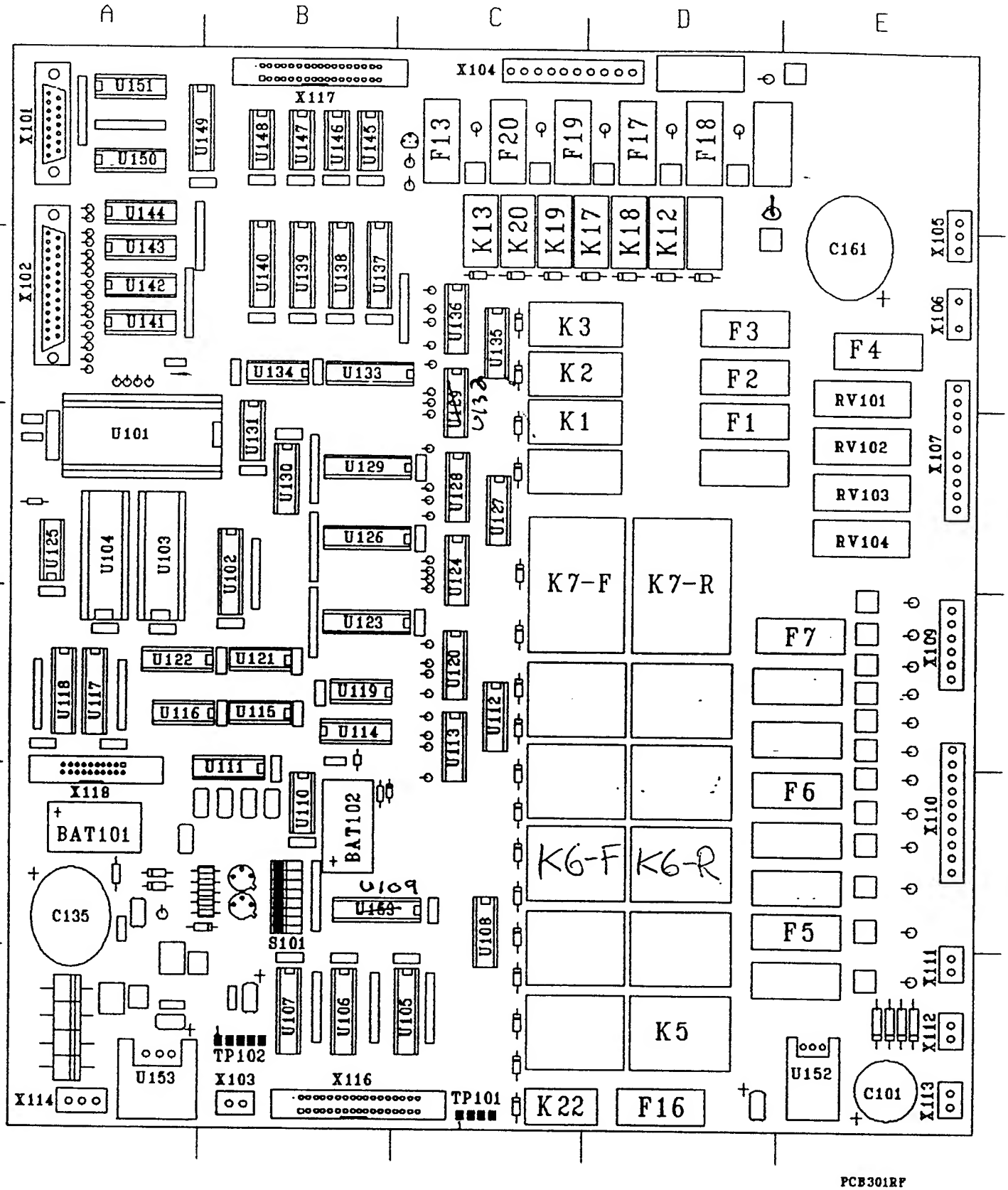
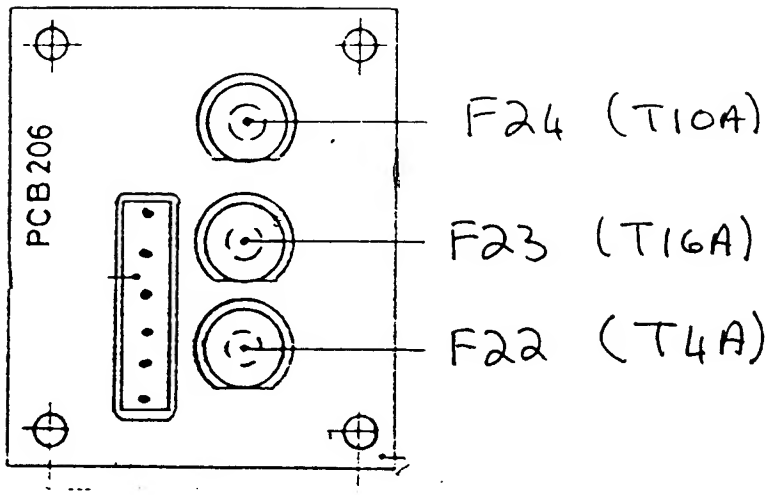

A
B
C
D
E
1
2
3
4
5
6
X101
X102
X104
X105
X106
X107
X109
X110
X111
X112
X113
X114
X116
X117
X118
U101
U102
U103
U104
U105
U106
U107
U108
U110
U111
U112
U113
U114
U115
U116
U117
U118
U119
U120
U121
U122
U123
U124
U125
U126
U127
U128
U129
U130
U131
U133
U134
U135
U136
U137
U138
U139
U140
U141
U142
U143
U144
U145
U146
U147
U148
U149
U150
U151
U152
U153
F13
F20
F19
F17
F18
K13
K20
K19
K17
K18
K12
C161
K3
K2
K1
F3
F2
F1
F4
RV101
RV102
RV103
RV104
K7-F
K7-R
F7
F6
K6-F
K6-R
F5
K5
K22
F16
BAT101
BAT102
C135
C109
S101
TP102
TP101
C101
PCB301RF

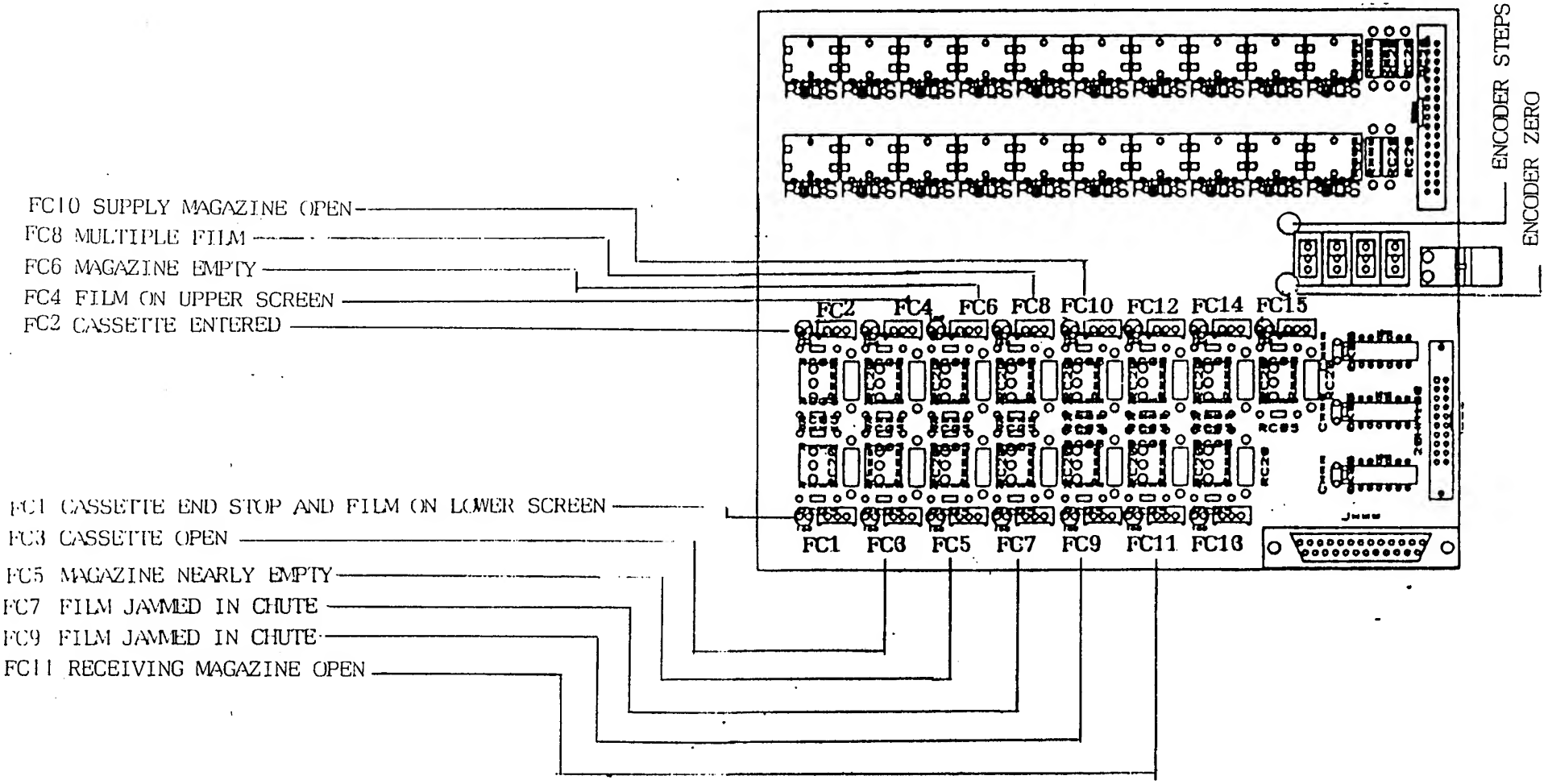
FIG 1

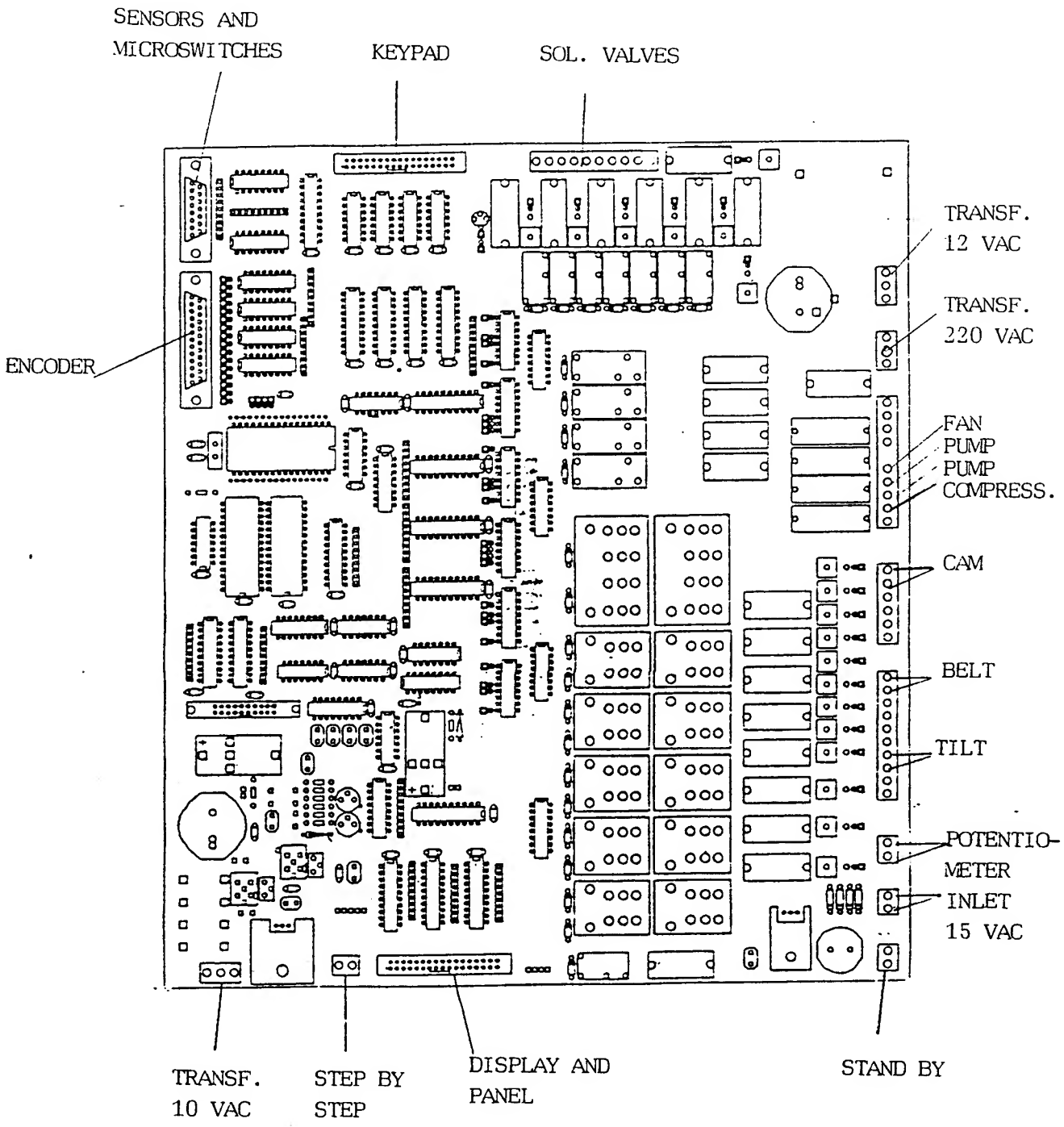


PCB 206

FIG 2

fig 3


FC10 SUPPLY MAGAZINE OPEN
FC8 MULTIPLE FILM
FC6 MAGAZINE EMPTY
FC4 FILM ON UPPER SCREEN
FC2 CASSETTE ENTERED
FC1 CASSETTE END STOP AND FILM ON LOWER SCREEN
FC3 CASSETTE OPEN
FC5 MAGAZINE NEARLY EMPTY
FC7 FILM JAMMED IN CHUTE
FC9 FILM JAMMED IN CHUTE
FC11 RECEIVING MAGAZINE OPEN
ENCODER STEPS
ENCODER ZERO
FC2 FC4 FC6 FC8 FC10 FC12 FC14 FC15
FC1 FC3 FC5 FC7 FC9 FC11 FC13

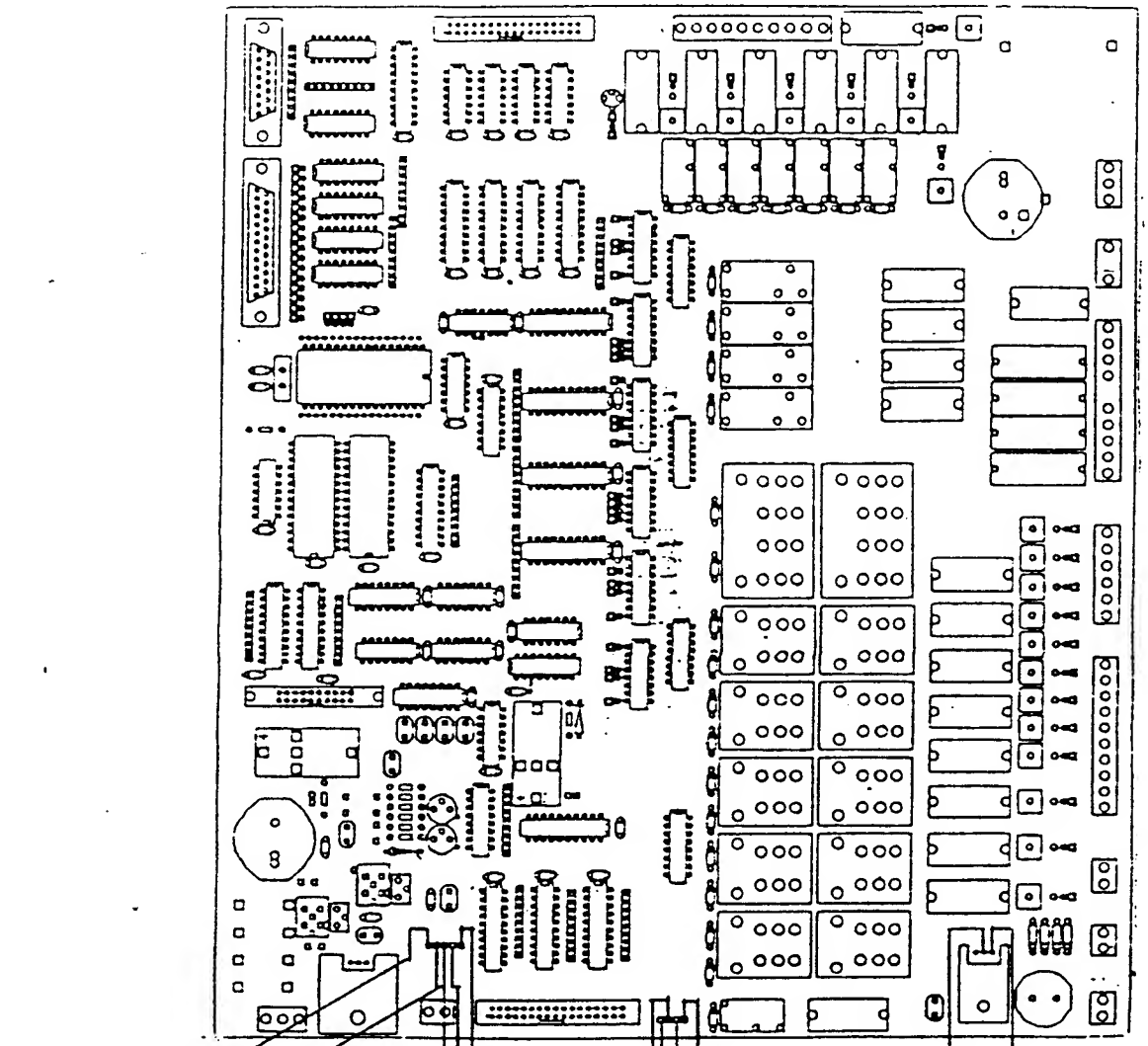


CPU BOARD PCB 3 0 1

CONNECTORS

fig 4

TEST POINTS PCB 301



- 12VDC
+ MOTORS SUPPLY

- 19VDC
LEVELLED VOLTAGE

- +
5VDC
MICROPROC.
SUPPLY

- 12VDC
STABILIZED
VOLTAGE RELAIS
COIL SUPPLY

- +
12VDC
SENSOR SUPPLY

\+ RESET
\- CHECK WITH OSCILLOSCOPE
THE 5VDC, DELAYING
FOR SOME msec AFTER,
THE UNIT IS "ON"

- +
CLOCK
, MHz 11340 WITH
OSCILLOSCOPE

fig 5